

## ELECTION.

Robert A. Caldecough, Esq., of Philadelphia, was elected a *Member* of the Academy.

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*December 2d.*

Vice-President BRIDGES in the Chair.

Letters were read :—

From Dr. E. K. Kane, acknowledging the receipt of a copy of the resolution of thanks to him, adopted at a late meeting of the Academy, and stating his intention to make also a donation of a small collection of plants from a high Northern latitude, ( $76^{\circ} 15'$ .)

From the Royal Academy of Sciences of Stockholm, dated November, 1849, and October, 1850, acknowledging the receipt of several numbers of the Proceedings and Journal of this Academy.

From the same, of same dates, transmitting the Transactions of the Academy, Parts 1 and 2 for 1848, and of the Bulletin for 1849, and also a medallion in copper of the late Jacob Berzelius.

From the Royal Academy of Sciences of Madrid, transmitting Part 1, Vol. 1, third series of its Memoirs, and a Resumé of its transactions for the years 1848–49. Also inviting experimental essays on the subject of Nitrification for a *Concours*, and announcing that prizes would be awarded for the best essays.

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*December 9th.*

Vice-President WETHERILL in the Chair.

Communications were read from :

Mrs. Emily Taylor, dated Philadelphia, December 6th, 1851, returning acknowledgments for the Resolution adopted by the Academy, conferring the right of endorsing tickets of admission to the Museum.

And from Mrs. Rebecca Morton, dated Philadelphia, Dec. 8th, 1851, returning thanks for copies of Dr. Meigs' Memoir of the late Dr. Morton, presented to her by the Academy.

Dr. David Dale Owen read a paper intended for publication in the Journal, entitled "Description of a new Mineral and a new Earth." Referred to a Committee, consisting of Mr. Vaux, Dr. C. M. Wetherill, and Dr. McEuen.

Professor Horner read a history of some cases of Articular Inflammation of the Knee, treated successfully with Urate of Ammonia. Referred to Dr. Leidy, Dr. Hallowell, and Dr. Rand.

Professor Horner introduced to the Society Monseigneur Demers, Bishop of Vancouver, who gave much interesting information respecting the habits, language, and traditions of the Indian Tribes of Oregon, forty-one of which, out of seventy-one, had been visited by him. He also offered the hospitalities of the Mission to which he was attached, to such

members as might be visiting that region, and expressed his wish to further the objects of the Society.

Professor Horner exhibited some specimens of Adipocire, fragments of human bones, and mould, obtained from a cemetery which had been in use for upwards of a century, and from which the remains are now being removed. One specimen of crumbling bone was proved to be more than one hundred years old.

He also read the following by Mr. John Rommel, Jr., giving some particulars in relation to the subject.

“The cemetery from which the specimens were obtained has been used for more than a century.

The ground for the depth of ten or twelve feet is of ordinary yellow clay, below which it is of a gravelly nature. In the majority of places it is very hard and dry, but in some places it is quite moist, and in one or two places actually swampy. The workmen in removing the remains, in order to save time, dig a trench about eight feet wide and about twenty feet long, then the following eight feet are undermined, and this is thrown into the dug trench; hence there is necessarily a great confusion as to the dates of the remains.

But comparatively few remnants of coffins were found, but an immense number of bones still remained.

In situations which were very free from moisture, no vestige of bone or coffin was found after a lapse of twenty to twenty-five years, and even in less time; but as the ground became more moist, the preservation was more complete; and where it was swampy, the preservation was almost perfect; pieces of shavings from the coffin (originally left there by the undertaker) being found, which had been interred above forty years, and the soft parts adhering to the bones, in the shape of Adipocire. I saw a corpse removed (having been interred thirty-five years) which was in an almost complete state of preservation: the countenance was so perfect, that the friends of the deceased might easily have recognized him; the garments were in a good state, as was also the coffin.

In removing the earth, the workmen would probably strike a skull; the ground being then carefully removed, the perfect skeleton was displayed, all the bones being in their respective places, as if the anatomist had carefully arranged them previous to making an artificial skeleton; no ligament or muscle to be seen.

The latter were not seen in some instances in five or six years after burial. Accompanying the bones, I always observed some black matter, which was probably the remains of the coffin; and where no bones at all were found, about a shovel full of this black earth was seen, indicating the spot where the individual had lain.

*The Bones.*—There was of course every variety of sizes, and in all stages of preservation; sometimes I only saw the shaft of the tibia, which had no other mark of distinction than the spine; sometimes the femur, known only by its comparative magnitude, and by the *linea aspera*; some were crumbled to small pieces, and the slightest handling reduced them to powder. They were nearly all brown or blackish, many looking as if they had been smoked.

*The Odor.*—The odor arising from the graves was not perceived unless in close contact with the remains, and then it was but faint and slightly disagreeable, and when the air came in contact with it, it was immediately dispelled. The bones, after being removed, had an earthy odor, and not at all disagreeable.

*The Skull.*—In all instances where the sutures of the skull had not been completely obliterated previous to death, by old age, &c., I observed the partial or complete separation of the bones, in many instances lying side by side, completely separated, and in good condition.

*The Hair.*—I had expected to find much more hair than I did; some few specimens were found well preserved; one belonged to a young man, and was as smooth, and in as fine a state, as if the hair-dresser had just left him, but he had not been buried many years. In the majority of cases where it was found it was only in small quantities, and was torn with the utmost facility.

*The stature* of many of the individuals was remarkable, judging from the bones, many were over six feet, and many over six feet five inches in size. Quite a number of iron handles (belonging to the coffins) remained, either in a state of partial or complete oxidation, and remains of breast plates were also found, but the engraving was totally unintelligible.

The interring of jewelry does not appear to have been fashionable in those days, or else the workmen overlooked it; only a piece of one ear-ring was found, and that was as highly polished as if it had just come from the hands of the jeweller.

From the discrepancy regarding dates, these are all the facts which I have been able to obtain; but having heard from good authority that a similar enterprise will be undertaken shortly, I am in hopes I shall be able to obtain more facts on this interesting subject."

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Dr. Leidy exhibited a number of fossil reptilian and mammalian remains, which he characterized verbally as follows:—

*CIMOLIASAURUS MAGNUS, Leidy.* A saurian established upon thirteen vertebræ, apparently from one individual, found in the Green Sand of New Jersey, and preserved in the Museum of the Academy. Two of the vertebræ are posterior dorsal, the remainder lumbar. All of them have the processes broken off, excepting one of the dorsal, which still preserves its transverse processes nearly entire.

The vertebral bodies are broader than they are long, being compressed cylindrical in form, gradually expanding from their middle to the angular edge of the articular surface. The latter are slightly concave, about one-half the depth of those of *Poecilopleuron Bucklandii, Desch.*, with the centre a little prominent and becoming slightly convex towards the edges.

The transverse processes remaining in one of the specimens of dorsal vertebræ are prominent, thick, irregularly cylindrical tubercles, projecting from the middle of the side of the vertebral body, with an oblique articular facet for the rib.

In the lumbar vertebræ the transverse processes incline downwards from the lower part of the bodies laterally, as in *Mososaurus*.

*Measurements of the largest dorsal vertebra.*

Length of body, . . . . .	2½ inches.
Breadth " at articular faces, . . . . .	4½ "
Height " " " . . . . .	3½ "
Depth of articular faces, . . . . .	2 lines.
Length of transverse processes, . . . . .	1 inch.
Diameter " " " . . . . .	1½ "
Breadth of spinal canal, . . . . .	1 "

*Measurements of the smallest lumbar vertebra.*

Length of body, . . . . .	2 inches.
Breadth " . . . . .	2½ "
Height " . . . . .	2 in. 10 lines.
Depth of articular surfaces, . . . . .	2½ lines.

*DISCOSAURUS VETUSTUS*, *Leidy*. A saurian founded upon a single vertebra with the processes broken away, obtained by Mr. Joseph Jones from the cretaceous formation of Alabama.

The body is about as large, and has a general resemblance to that of *Plesiosaurus pachyomus*, *Owen*, represented in fig. 3, tab. xx., of the Monograph on the fossil reptiles of the Cretaceous Formation. It differs most remarkably from the vertebral bodies of *Plesiosaurus*, in the articular faces forming distinct concave disks, separated from the body by a constriction or short neck. The body is relatively much broader in relation to its length than in *Plesiosaurus*. The specimen is a cervical vertebra. Upon each side it has a deep, concave, transversely oval, costal pit, with a very prominent, sharp border.

*Measurements.*

Length of body, . . . . .	2 inches.
Breadth " . . . . .	2½ "
Height " . . . . .	2½ "
Depth of articular surfaces, . . . . .	2½ lines.
Transverse diameter of costal pit, . . . . .	1½ inches.
Vertical " " " . . . . .	11 lines.
Depth of costal pit, . . . . .	4 "

The fragment of a vertebra described by Dr. Dekay in the Annals Lyceum of Nat. Hist. of New York, Vol. 3, p. 165, and represented in Pl. 3, fig. 11, from the Green Sand of New Jersey, and observed by that gentleman to be allied to the *Plesiosaurus*, probably belongs to the *Discosaurus vetustus*.

The vertebra described by Dr. Harlan in the Journal of this Academy, Vol. 4, p. 232, and represented in pl. xiv. fig. 1, was referred to the *Plesiosaurus*. The specimen was from the Green Sand of New Jersey, and is preserved in the cabinet of the Academy. It does not belong to a saurian, but is a posterior dorsal vertebra of a cetacean allied to the *Delphinus*. The vertebral body is relatively twice the length of what it is found to be in the latter. The transverse process is also relatively short and broad; at its extremity it has an articular facet for the head of a rib.

The vertebra is probably the type of a form existing in a distinct genus of ancient Cetacea, for which I propose the name *PRISCODELPHINUS*. The species I

dedicate to the memory of Harlan, under the name of *PRISCODELPHINUS HARLANI*, *Leidy*.

In the collection of the Academy there are preserved two caudal vertebræ of a young cetacean, from the Green Sand of Jersey. These specimens are larger than the dorsal vertebra just described, but from the length of their bodies, and the width antero-posteriorly of the neural arch, I suspect them to belong to the same genus of the latter, but a larger species, for which I propose the name *PRISCODELPHINUS GRANDÆVUS*, *Leidy*.

*Measurements of the posterior dorsal vertebra of P. Harlani.*

Length of body, . . . . .	2 inches.
Breadth of articular surfaces, . . . . .	8 lines.
Length of transverse process, . . . . .	1½ inches.

*Measurements of two caudal vertebræ of P. grandævus.*

Length of body, . . . . .	2½ inches.
Breadth of epiphysial surfaces, . . . . .	2½ "

The two species of *Priscodelphinus* possess more than ordinary interest, from their being the first mammalia which have been discovered in the cretaceous formations.

*CROCODILUS FASTIGIATUS*, *Leidy*. Established upon a tooth which Mr. T. Conrad informed me was obtained by Mr. Smiley from the Eocene formation of Virginia. The specimen is about the size of that of *Crocodilus champsoides*, *Owen*, represented in fig. 11, tab. v., of the Monograph of the fossil Reptilia of the London Clay by Prof. Owen. The crown has about the same length as in the last mentioned species, but is more robust, more curved and pointed, with more numerous ridges but not so coarse, and between the larger are from one to four fine corrugated linear ridges. The fang is also a little more robust. The enamel is jet black, shining. The osteo-dentine is thick, dark brown with a resinous lustre.

*Measurements.*

Length of crown, . . . . .	9 lines.
Diameter at base, . . . . .	4 "

Dr. L. further called the attention of the members to some very remarkable fossil remains of mammalia from Nebraska, belonging to the collection of Dr. D. D. Owen.

The fossils consisted of a nearly entire cranium of *Rhinoceros occidentalis*, two crania of *Oreodon priscum*, a large portion of the face of *Archæotherium Mortoni*, which has true molars resembling those of *Chæropotamus* and *Hyracotherium*, and a very perfect turtle, which was characterized as follows.

*EMYS OWENI*, *Leidy*. Approaches the genus *Testudo* in many of its characters. Carapace very convex; marginal plates nearly vertical; costal plates alternately broad and narrow. There are nine vertebral, nine costal, and eleven marginal plates each side of the pygal and nuchal.

		Straight.	Curve.
Length of Carapace, . . . . .		11 inches.	13 inches.
Breadth " . . . . .		8½ "	14 "
Height " . . . . .			5½

The species is named in honor of Dr. D. D. Owen, of New Harmony, Indiana, who has contributed this as well as numerous other objects to Palæontology.

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Dr. Owen made the following observations on the locality of the fossils from the "Mauvais Terres" of Missouri.

The region of country where the remains of the fossil mammalia exhibited were procured, is a part of the district known to the French Canadian voyageurs of the Upper Missouri as the Mauvais Terres or Bad Lands, which lie between the Missouri river and the base of the Black Hills, and the waters of the Shagea and Moreaux. It presents the appearance of the great bed of some ancient lake, the base of which is some three hundred feet below the general level of the wide expanse of prairie which rises in terraces towards the Rocky Mountains.

This depressed valley of the Mauvais Terres appears more a valley of excavation than of subsidence, as is proved by the multitude of isolated pinnacles, mounds, and curious outliers, which, having resisted the denuding forces, stand in all imaginable fantastic shapes, memorials of the excavating forces that have been at work. These rise to the height of from two to three hundred feet, and form between them a complete labyrinth of intricate passages stretching as far as the eye can reach, that soon bewilder the incautious explorer.

These remarkable insulated peaks, like the sides of this great valley, are composed of horizontal beds of indurated clays, marly strata, and thin beds of quartz ore conglomerates, all probably belonging to the age of the Eocene tertiary, and are the receptacles of those unique fossil remains, presenting a most extraordinary assemblage of pachyderms, some of which seem to have combined the at present anomalous character of ruminants, associated with a few carnivorous animals.

The skulls, bones, and fossil fresh-water turtles are mostly found on mounds of white, pale flesh-colored, and light grey and greenish marly and argillaceous earths, the debris of denuded strata. The Palæotherium bed lies towards the base of the section, from ten to twenty feet above the bottom of this great valley.

Further details concerning this curious country and its ancient fauna, together with a section of the strata composing it, will be found in the forthcoming geological report of the North West.

The Committee on Proceedings announced that Dr. Meigs' Memoir of the late Dr. Morton was published, and was now ready for distribution. On motion of Dr. McEuen it was

*Resolved*, That the thanks of the Society be presented to M. Desmers, Bishop of Vancouver, for his offer of the hospitalities of his Mission to the members, and of his assistance in furthering the objects of the Society, and that a Committee be appointed for the purpose of seconding his proposal.

Committee, Dr. McEuen, Dr. Horner, and Dr. Leidy.